

A little maths never hurt anyone*

$$\text{Momentum} = \text{mass} \times \text{velocity} = mv$$

we know that Force = Mass \times acceleration

$$F = ma$$

$$\text{so if } a = \frac{(v_2 - v_1)}{t}$$

then:

$$F = m \cdot \frac{(v_2 - v_1)}{t}$$

and so

$$Ft = m(v_2 - v_1)$$

$$= \underbrace{mv_2 - mv_1}$$

change in momentum.

So the change in momentum of a body (say a ball struck by a bat) is equal to the force exerted on it multiplied by the duration of contact.

We call $F \times t$ "impulse". If you look on the engine of a model rocket, the thrust is measured as impulse, in Ns, to indicate the change in momentum that it can impart to a rocket.

* Manhattan project notwithstanding.